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NATIONAL GEOGRAPHIC SOCIETY

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A 2,000-year Dream Realized: Jews Come Home to ISRAEL

UMI

Problems and promise: The border guard at left watches the hills of Jordan across a desert valley at Yotvata in the Negev. An unfriendly land and unfriendly neighbors force Israelis to be both fighters and farmers.

Below, the fruit of their labors, a cucumber harvest near the Sea of Galilee. Here engineers have reclaimed 15,000 acres of fertile land from a malarial swamp that dated back to Biblical times. Jordan River water irrigates the area.

IN THIS ISSUE–

- ► Israel
- ► Judaism
- ► River Pollution
- ► Tornadoes

they lived, sometimes free, sometimes conquered by various neighbors, until 70 A.D. when the Romans destroyed Jerusalem, and the Jews scattered throughout the world.

Arabs, Turks, Crusaders, Egyptians, and a second wave of Turks followed each other in lively succession to conquer the Holy Land. Wars and neglect turned the country into a wasteland. But Jews all over the world still dreamed of returning to their ancient homeland. They began to trickle back near the end of the last century.

World War I saw the British drive the Turks out of the Holy Land and hold it under a mandate from the League of Nations. After World War II the United Nations divided it, creating the Jewish state of Israel in the western and southern section and leaving the eastern section, now part of Jordan, to the Arabs.

Israel's independence signaled the Arabs of Syria, Egypt, Lebanon, and Jordan to invade the new country, for the Arabs be-

PHOTOGRAPHS BY BRIAN BRAKE, MAGNUM

Israel Celebrates Its *Bar Mitzvah*

FROM 85 COUNTRIES they came. In the greatest exodus since Moses led their ancient ancestors out of bondage in Egypt to the promised land, Jews left their homes on five continents to converge on a small new country: Israel. A 2,000-year-old dream was coming true.

They left New York apartments and the deserts of Iraq and Yemen. They sailed from Indian villages, Polish ghettos, and Brazilian cities. From Australian farms and Moroccan towns, from displaced persons camps in Germany, and Chinese hamlets came the human tide. They are white-skinned, yellow-skinned, black, and brown-skinned. Their faces, like those of the Jerusalem crowd at left, reflect world-wide origins.

They came in such a hurry that Israelis say their land is not a melting pot but a pressure cooker. Most of these immigrants have poured in during the last 13 years—since May 14, 1948, when David Ben-Gurion, now prime minister, read Israel's Proclamation of Independence in a Tel Aviv museum. During these 13 years they have swelled Israel's population from 650,000 to more than 2,000,000.

This river of people continues to course into Israel. The bearded immigrant and his granddaughter on the cover have come from the island of Djerba off the North African coast. As they wait for a truck to take them from the port of Haifa to a new settlement in the desert, hope and fear mingle in the old man's face, wonder marks the child's.

The land these people have come to is small—7,992 square miles—only a little larger than New Jersey. Israel recently celebrated its 13th anniversary, its *bar mitzvah* (coming of age), and has truly become an adult among nations.

Israel was once part of Palestine, the Holy Land of the Bible, sacred not only to Judaism, but to Islam and Christianity. Sometime during the 20th century B.C., the Jewish patriarch Abraham led his people out of Mesopotamia to Palestine, then called Canaan. Later, neighboring Egyptians enslaved many of the Jews. Moses, probably during the 13th century B.C., led them out of bondage back to Palestine where

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These Spartan pioneers have wrested farmland with their bare hands from swamps and deserts, often fighting off the Arabs at the same time.

Although Israel must import coal, iron ore, and most of the oil for its factories, many industries have been started. Among the products of its new plants are textiles, chemicals, plastics, refrigerators, electrical equipment, razor blades, watches, soap, false teeth.

The country looks forward to the day when its factories will turn out even more, making it the "Switzerland of the Middle East": importing only raw materials, exporting finished products.

Archeologists uncovered the ancient mines of King Solomon at Timna. Miners took over to produce all of Israel's copper needs.

Even the Dead Sea, so salty no fish can live in it, has been turned into an asset. At left an engineer at Sedom tests its water. Extraction plants "mine" the Sea for carnallite, rich source of potassium.

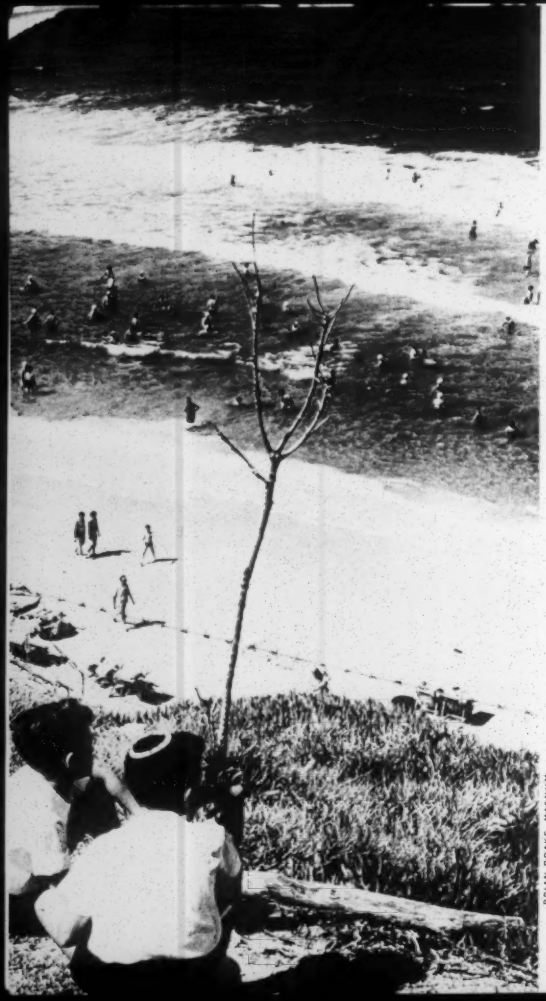
Modern cities mushroom, their suburbs overflowing into the surrounding hills. Towns sprout the length of the country. Before independence Beersheba was a dusty caravan stop at the edge of the Negev. Israelis turned it into a bustling industrial town. A new chemical plant and a research institute that seeks new ways to conquer the desert now spread across its sands.

BRIAN BRAKE, MAGNUM

The Arab-Israeli truce divided Jerusalem, Israel's capital, into two sections. Israelis found the campus of Hebrew University on a hill of disputed territory surrounded by Jordan. So they built another. Above, the modern administration building of the Hebrew University rises over the new campus.

The flow of Jews into the country continues; the hard wrestling with the desert must go on. In research institutes, Israelis labor to find new ways to make use of their slender resources: to wring fresh irrigation water from the salt sea, to trap and put to work the strong hot rays of the desert sun, to harness the winds.

But there is a little time, now, for moments of relaxation: to browse the bookshops of Tel Aviv, to swim in the blue Mediterranean (far left) or to listen to the world-renowned Israeli Philharmonic Orchestra. L.B.



BRIAN BRAKE, MAGNUM

lieve Palestine belongs to them. Israeli forces took and held more land. The two sides agreed to a United Nations-sponsored truce, but it is an uneasy peace and each side, distrusting the other, keeps constant guard at its borders.

The rocky land the Jews returned to was about as hospitable as a crater on the moon. Strips of fertile land along the Mediterranean coast, near the Sea of Galilee, and in a few isolated valleys held all the decent farm acreage it could claim. More than half the country was desert. The Negev, the triangular-shaped southern section of the nation, lay lifeless under the hot sun, mile after mile of sand without a tree or a blade of grass.

There were only a few small cities and slumbering ancient settlements through which Biblical heroes had trod.

Today all this has changed. The desert has receded, its sands replaced by green fields of cotton, orchards, acres of wheat, and pastures where cattle and sheep graze. Pipelines carry water 65 miles from the Yarkon River in central Israel to the Negev in the south.

Brown hills have turned green with vineyards, orchards, and trees. Swamps have been drained and planted to cotton, sugar cane, peanuts, and rice.

Today Israel produces 80 per cent of its own food, even exports some citrus fruit.

Much of the credit for conquering the stubborn land goes to the *kibbutzniks,* inhabitants of the *kibbutzim,* Israel's communal farms. Some 84,000 people now live on 225 kibbutzim. Land, houses, even rugs and radios are owned by the *kibbutz* as a whole. Whatever one needs, one draws from the community storeroom: books, clothing, camera film. Workers pool cooking, washing, educational facilities.

DAVID S. BOYER, NATIONAL GEOGRAPHIC STAFF

the centuries on how to interpret God's will as set down by the authors of the Bible. The scholar is the Jewish hero, and Judaism's clergy are called *rabbis,* literally teachers. This emphasis has resulted in another body of laws, the Talmud—63 books—which extend, interpret, and augment the scriptures and adapt them to daily life.

Today every part of the religious Jew's life reflects God's commands to Moses and their interpretation. Judaism admits a life after death—though its form is open to interpretation by the individual. But its teaching concentrates on how to live this one.

The religious Jew's home is a house of God, his table is an altar. He holds to ancient dietary laws that forbid pork and shellfish. He rigidly separates dairy and meat dishes—both cannot be served at the same meal, and each has its own plates which are never used for the other. (This is based in the Biblical command "thou shalt not seethe a kid in its mother's milk.") The Jew honors the Sabbath—from sundown Friday to sundown Saturday—as a day of spirituality. Then he prays at home and in the synagogue, refusing to work, write, or touch money.

During the last century, Judaism split into three branches: Orthodox, Conservative, and Reform. Orthodox Jews observe ancient Jewish laws to the letter. Conservative Jews believe the laws are open to many interpretations and have modified some. Reform Jews adapt the laws to the time.

Whatever his tradition the Jew observes the main holidays of the Hebrew calendar. Above, the *shofar* (ram's horn) is sounded to herald Rosh Hashanah, the Jewish New Year which comes in September or October. It begins a 10-day period of repentance and soul-searching ending with Yom Kippur, a day of fasting and prayer. Passover in March or April celebrates the Exodus from Egypt. Hannukkah, in November or December, celebrates a successful revolt of Jews against Hellenist conquerors in 165 B.C.

In the Jewish view, history is building up to the coming of a Messiah and the Messianic Age, prophesied by Isaiah, when nations "shall beat their swords into plowshares, and their spears into pruning-hooks; Nation shall not lift up sword against nation, Neither shall they learn war any more." L.B.

PHOTOGRAPHS FROM UPI

Religions of the World, No. 9

JUDAISM

HIS HEAD reverently covered by a *yarmelke* (cap), his young shoulders draped with a prayer shawl, a boy holds the sacred Torah, the Scroll of the Law, in a New York City synagogue. He will take off its cover and read from it to the congregation.

It is the Sabbath following his 13th birthday, and his still-soprano voice will quiver with excitement as the Hebrew phrases tumble out almost too fast for comprehension. With this act—his *bar mitzvah*—he becomes an adult member of the congregation.

The boy is a Jew, one of some 12 million scattered around the world. His faith, Judaism, is the parent of two other religions: Christianity and Islam.

In today's Iraq and Syria lies Mesopotamia—land between two rivers, the Tigris and Euphrates. Here, about 1900 B.C., a man named Abraham lived in a city called Ur of the Chaldees. His neighbors worshiped many spirits and gods as did primitive man everywhere. Abraham, however, chose one God above all others, and so began the trend toward monotheism, the great contribution of Jews to the world. Abraham preached his idea of one God as he made his way to Canaan (now Israel and Jordan).

Some 600 years later Moses, leading the Hebrews (who had been enslaved in Egypt) back to Canaan, had a vision of God in which he received the Ten Commandments. As the first Commandment, God ordered: "Thou shalt have no other gods before Me."

Moses said *Shema Yisroel Adonoi Elohenu Adonoi Echod*—"Hear, O Israel, the Lord our God, the Lord is One." This is the first prayer a Jew learns and the last he says before death. He repeats it morning and evening during life.

The scriptures of Judaism are the first five books of the Bible (the Torah) and by extension, all the Old Testament. The Torah ranges from the basic teaching of the Ten Commandments to the minute details of daily life. These books told the Israelites how to build a tabernacle, how to keep the Sabbath, what food to eat ("... whatsoever is wholly cloven-footed, and cheweth the cud ... whatsoever hath fins and scales ..."), how to treat strangers (kindly), how to deal with other people (justly).

Jewish thought has concentrated over

English Thames have masses of chemical foam spreading from their treatment plant outlets. The detergent moves on downstream to foul the water supply of the next city—some American towns have discovered that their drinking water foams as it comes from the tap.

Conquering the atom has led to additional complications. The United States Public Health Service has found dangerous amounts of radium and radioactive strontium in the water supply of towns downstream from uranium plants.

We know how to control the three types of stream pollution.

Proper farming and lumbering would leave the topsoil where it belongs instead of letting it float away as silt to choke water life and fill up reservoirs.

Sanitary sewage can be treated and returned to the stream as clean (though not pure) water.

Industrial wastes, too, can be cleaned (often at a profit to the factory).

There are several reasons why we are falling behind in the struggle to keep our rivers clean. One is historical. When the United States was a basically rural nation, rivers could purify themselves in the space between uses. Now a more urbanized nation overloads its streams (the water of the Ohio River, for example, is used four times on its way downstream; some cities are drinking water that has been through the sewers of three previous towns).

Antipollution treatment costs money, another inhibitor of action.

One of the long-time factors in the situation is the very human "out of sight, out of mind" attitude that allows us not to think about the sewage we send to our downstream brother's door.

Slowly, we are beginning to realize that, where pollution is concerned, everyone must be his brother's keeper and join in the fight to keep our rivers clean. F.S.

Cause and cure: The greatest user of United States rivers—and the greatest polluter—is industry, such as the Pittsburgh mill dumping its wastes into the river at left.

Below, a recently completed sewage treatment plant at St. Clair, Michigan, helps clean the Pine River. Under a plan to encourage building of such facilities, the Federal government offers grants of money to help communities build. The St. Clair plant cost $684,000; the Federal contribution was $157,159.50.

U.S. FOREST SERVICE

The Living River, No. 6

Man Dirties the Waters

IT IS QUITE POSSIBLE to kill a river—to turn it into a stinking menace in which no fish can live, and no human dare wade—much less swim or drink.

We know it is possible because we have done it to some streams. Others—most of our rivers—are only sick.

The children playing beside the pretty stream at left are lucky. In more and more areas around the United States, the sad signs are going up, "DANGER. Pollution. Swimming, Fishing, and Boating Prohibited."

Many communities, seeking to lure factories with their payrolls, discover that one of the first questions a manufacturer asks is "Is there enough clean water?" Too often, the answer is "No."

Rivers are in trouble because they are too useful for their own good. Rivers not only offer water supply, they can carry away things we don't want to have around: chemicals left over from manufacturing, human wastes. Rivers also carry off things we'd like to keep, such as the good topsoil from improperly plowed fields.

Around the world the problem is growing. Japanese fishermen have rioted and stormed plants that discharged fish-killing wastes into the Edo River. The Nile at Cairo is so dirty and germ-laden that no foreigner dares stick a toe in it for fear of disease. The natives have built up some resistance to its bacteriological cargo.

The highly-developed countries of Europe face the same problems found in the United States, more and more clean water taken out and more and more dirty water thrown back into the stream.

In the United States, despite a growing number of sewage plants in cities and industrial plants at factories, pollution generated by a rising population is increasing faster than treatment facilities.

New complications are coming up, too. As garbage disposal machines multiply, more ground filth is dumped into sewer lines.

It is estimated that some 7,000 new chemicals a year come into being—and many find their way downhill into the river.

A classic example is the boom in detergents. When the world's wash was done with soap, the bacteria that break down wastes in sewage treatment plants could cope with it. The new detergents are not affected by them.

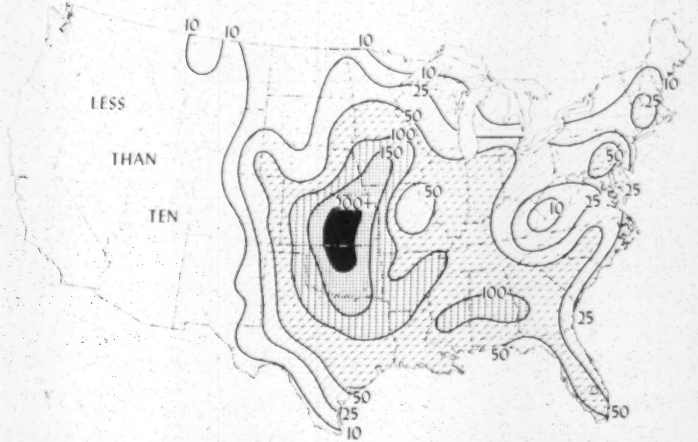
Both the American Potomac and the

ments that measure temperature, icing, humidity, air pressure, windspeed, latitude, longitude, and altitude.

Through the magic of modern computing machines, the data is automatically translated and stored on magnetic tape. So rapidly does the system work that ten full sets of readings can be taken in one second.

At first the Rough Riders fly a loose pattern over a large area.

Where Tornadoes Hit Most Often in the United States



Midwesterners know tornadoes best. White area on map shows that the West is almost free of twisters. The East has relatively few. Darker shades mark "Tornado Alley." Figures show the total number of tornadoes observed within each 100-square-mile block of each area during the 40-year span from 1916-1955.

U. S. WEATHER BUREAU

As cumulus clouds build into ominous black mountains, and air currents generate an updraft, the planes converge on the threatening segment of the squall. Instruments record the fast-changing readings. Technicians within the plane photograph the cloud cover and watch the developing storm on their radar.

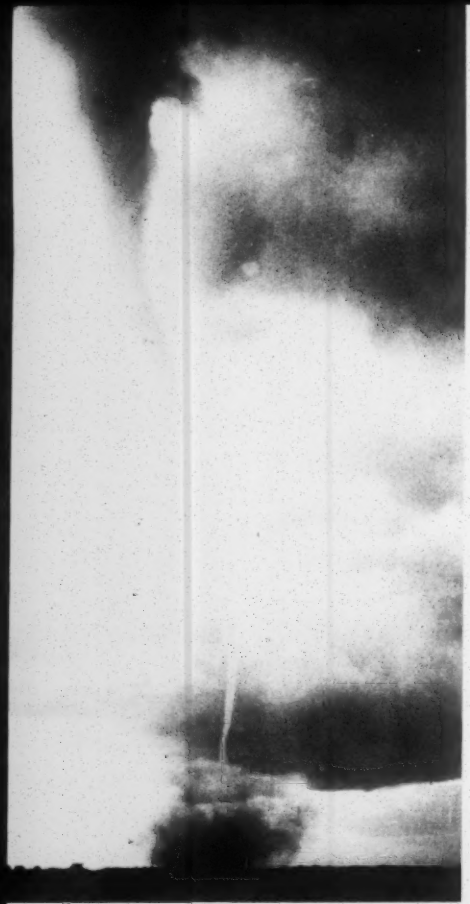
Even if the Rough Riders are "lucky" enough to encounter a full-blown tornado, they have no intention of flying through it. A tornado whirls between 200 and 500 miles per hour—more than enough to splinter an airplane.

When the planes return to Oklahoma City from a tracking mission, their reels of magnetic tape unveil an entire "biography" of the storm.

For Mrs. Hertel and other tornado-wary citizens, the Weather Bureau hopes to improve its forecasting techniques. With its fleet of planes now in the skies over Oklahoma, it has for the first time full ability to analyze severe squalls. From this flow of new facts should come better understanding, and thus more accurate predicting.

A.P.M.

UMI



WRIGHT AND GALE

Tornado Hunters Take to the Air

THE SULTRY June day seemed harmless enough. Toward afternoon, Mrs. Elsa Hertel remembers, the fluffy clouds filling the sky over Fargo, North Dakota, began to darken. Soon the sky boiled with clouds racing in different directions on two or three levels.

In the fading light, animals shifted restlessly. Birds darted about.

Suddenly, out of the seething cloud mass, a dark stem reached toward earth. Mrs. Hertel and her neighbors recognized the familiar tornado "funnel," but thought it would miss the town. Then they saw the brick YMCA two blocks away "explode into the air." They dashed for the basement.

"There followed about five minutes of roaring, battering, pounding, and wrenching," she recalls, "with the sustained screams of protesting timbers and one especially brilliant crash as all the windows shattered at once."

Then it was over. The Hertel home, along with those of 1,500 other Fargo families, lay demolished or damaged.

The Hertels were lucky—they were not hurt. Others are not so fortunate. Each year some 600 tornadoes, like this turbulent twister photographed near York, Nebraska, kill scores of U. S. citizens and wreak millions of dollars of damage. The worst tornado in United States history slashed across Missouri, Illinois, and Indiana in 1925, killing 689 persons and injuring 1,980 others.

In its latest move to make sure the toll never runs so high again, the U. S. Weather Bureau this spring is carrying out the largest study ever attempted on tornadoes, squall lines, and destructive local storms.

Called the "National Severe Storms Project," this effort brings together a score of carefully instrumented aircraft, ground-based radars, a network of ground weather stations, and high-flying balloons.

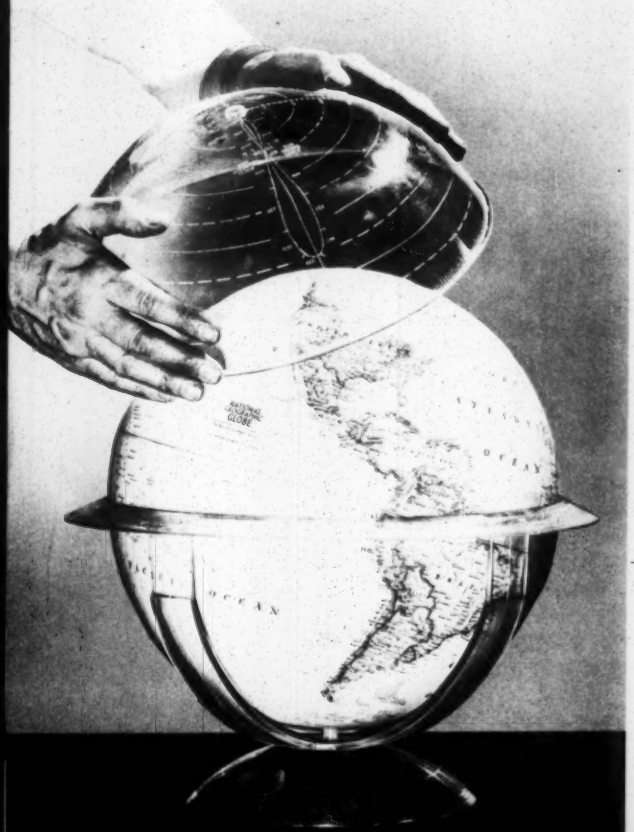
Meteorologists at Project headquarters in Oklahoma City, Oklahoma, keep a weather eye out for the distinctive clash of cool and warm air masses that gives birth to tornadoes.

Such an unstable atmosphere often results in a long line of thunderstorms, in which the tornado's spinning funnel may appear. Stretching for a hundred miles or more, moving from west to east, this squall line is characterized by severe thunder, flashing lightning, strong winds, heavy rains, possibly hail.

When observers at Oklahoma City discover a squall line forming, they alert all ground stations and call out "Rough Rider" planes like the converted B-57 at right.

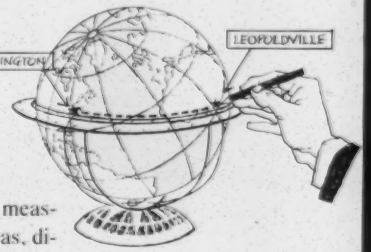
The planes are fitted with delicate instru-

the GLOBE with the THINKING CAP



A UNIQUE 12-inch globe with a "thinking cap" has been produced by the National Geographic.

Simple enough for children to use, this rigid globe is at the same time a precision tool for teachers and other experts. In classroom and home, it increases the knowledge and enjoyment of geography with unusual features not available in orthodox globes.



The geometer, or thinking cap, embossed with scales and measuring devices, allows ready comprehension of distances, areas, directions. Boundaries traced on its clear plastic can be moved over a lesser-known area for immediate comparison.

The globe's cradle permits free movement. If Antarctica is under study, you spin the bottom of the globe into easy view.

With the cradle's Great Circle Ring you instantly determine mileage, time difference, and shortest route between any two points. The globe also allows you to plot satellite orbits, and compute the sun's position anywhere at any time.

A clear, 10-color map covers the globe, showing 1961 boundaries and copious oceanographic information. An enclosed booklet indexes 4,179 place names, and describes all the globe's uses.

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